

CLAIMS

What is claimed is:

1. An extraction surface cleaning apparatus having:
 - a housing;
 - at least two wheels mounted to the housing for supporting the housing for movement along a surface to be cleaned;
 - 5 a liquid dispensing system mounted to the housing and including:
 - a liquid dispensing nozzle for applying liquid to a surface to be cleaned;
 - a fluid supply chamber for holding a supply of cleaning fluid;
 - a fluid supply conduit fluidly connected to the fluid supply chamber and to the dispensing nozzle for supplying liquid to the dispensing nozzle;
 - 10 a fluid recovery system mounted to the housing and including:
 - a recovery chamber for holding recovered fluid,
 - a suction nozzle,
 - a working air conduit extending between the recovery chamber and the suction nozzle; and
 - 15 a vacuum source in fluid communication with the recovery chamber for generating a flow of working air from the suction nozzle through the working air conduit and through the recovery chamber to thereby draw dirty liquid from the surface to be cleaned through the suction nozzle and the working air conduit, and into the recovery chamber;
 - 20 the improvement comprising:
 - a detector for sensing the speed of the housing across the surface being cleaned and for generating a speed signal representative thereof; and
 - an output device mounted on the housing and coupled to the detector for displaying or audibly expressing the relative speed of the housing across the floor being
 - 25 cleaned.

2. The extraction surface cleaning apparatus of claim 1 wherein the detector is aligned with and adjacent to one of the at least two wheels adapted to detect the rotational motion of the one of the at least two wheels without physically contacting the wheel.

3. The extraction surface cleaning apparatus of claim 2 wherein the detector comprises a first disk portion mounted to the one of the at least two wheels for rotation therewith; and a second pick-up portion fixedly mounted to the housing aligned with and adjacent to the first disk portion adapted to generate a signal representative of the rotation
5 of the first disk portion.

4. The extraction surface cleaning apparatus of claim 3 wherein the first disk portion has alternating opposite-polarity magnetic segments thereon and the second pick-up portion is adapted to detect the rotational speed of the first disk portion by detecting changes in the magnetic polarity of a particular segment of the first disk portion located
5 adjacent to the second pick-up portion.

5. The extraction surface cleaning apparatus of claim 4 wherein the output device comprises a converter interconnected with the detector and adapted to change the speed signal from the detector into a visual indicator of the speed of the housing across the floor.

6. The extraction surface cleaning apparatus of claim 5 wherein the visual indicator comprises at least one light-emitting diode that emits light representative of the speed signal received from the detector.

7. The extraction surface cleaning apparatus of claim 6 wherein the at least one light-emitting diode comprises a series of light-emitting diodes wherein output device illuminates a particular number of the series of light-emitting diodes proportional to the speed signal received from the detector.

8. An extraction surface cleaning apparatus having:

an extraction housing including a suction nozzle adapted to be moved along a floor surface to be cleaned;

5 a handle mounted to the extraction housing for grasping by a user and propelling the extraction housing over the floor surface;

a cleaning fluid delivery system interconnected with the extraction housing and movable therewith to apply a cleaning solution to the floor surface;

a fluid recovery system interconnected with the extraction housing to recover soiled cleaning solution from the floor surface;

10 a detector mounted to the extraction housing for detecting the relative speed of the extraction housing relative to the floor surface and for generating a signal representative of the detected speed; and

15 an output device operably interconnected with the detector, adapted to receive the signal generated by the detector and to indicate to a user the detected relative speed of the extraction housing.

9. The extraction surface cleaning apparatus of claim 8 wherein the indicator is mounted to the handle.

10. The extraction surface cleaning apparatus of claim 9 wherein the indicator is mounted in a line of sight of a user between a position behind the handle and the extraction housing.

11. The extraction surface cleaning apparatus of claim 8 wherein the handle is pivotally mounted to the extraction head.

12. The extraction surface cleaning apparatus of claim 8 wherein the fluid delivery and fluid recovery systems are carried on the extraction housing.

13. The extraction surface cleaning apparatus of claim 8 wherein the detector is aligned with and adjacent to one of the at least two wheels adapted to detect the rotational motion of the one of the at least two wheels without physically contacting the wheel.

14. The extraction surface cleaning apparatus of claim 13 wherein the detector comprises a first disk portion mounted to the one of the at least two wheels for rotation therewith; and a second pick-up portion fixedly mounted to the housing aligned with and adjacent to the first disk portion adapted to generate a signal representative of the rotation
5 of the first disk portion.

15. The extraction surface cleaning apparatus of claim 14 wherein the first disk portion has alternating opposite-polarity magnetic segments thereon and the second pick-up portion is adapted to detect the rotational speed of the first disk portion by detecting changes in the magnetic polarity of a particular segment of the first disk portion
5 located adjacent to the second pick-up portion.

16. The extraction surface cleaning apparatus of claim 15 wherein the output device comprises a converter interconnected with the detector and adapted to change the speed signal from the detector into a visual indicator of the speed of the housing across the floor.

17. The extraction surface cleaning apparatus of claim 16 wherein the visual indicator comprises at least one light-emitting diode that emits light representative of the speed signal received from the detector.

18. The extraction surface cleaning apparatus of claim 17 wherein the at least one light-emitting diode comprises a series of light-emitting diodes wherein output device illuminates a particular number of the series of light-emitting diodes proportional to the speed signal received from the detector.

19. A method of cleaning a floor surface with an extraction cleaner comprising the steps of:

moving the extraction cleaner across the floor surface;
depositing a cleaning solution from the extraction cleaner on the floor
5 surface;

recovering soiled cleaning solution from the floor surface with the extraction cleaner;

detecting the relative speed of the extraction cleaner with respect to the floor surface; and

10 communicating to a user the detected relative speed of the extraction cleaner.

20. A method of cleaning a floor surface with an extraction cleaner according to claim 19 wherein the communicating step comprises generating a visual signal.

21. A method of cleaning a floor surface with an extraction cleaner according to claim 19 wherein the communicating step comprises generating an audible signal.

22. A method of cleaning a floor surface with an extraction cleaner according to claim 19 wherein the communicating step further comprises generating a speed signal representative of said detected speed and converting the speed signal to an audible or visual signal that is readable and understandable by a user operating the extraction
5 cleaner.

23. The method of claim 19 and further comprising the step of generating a predetermined reference signal and comparing the reference signal to the speed signal.

24. The method of claim 23 and further comprising the step of alerting a user if the difference between the reference signal and the speed signal exceeds a predetermined threshold.